

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-2. (Canceled)

3. (Currently Amended) An apparatus for decomposing bromate ions contained in a liquid, said apparatus comprising:

a first section for generating therein a photocatalytic reaction to decompose said bromate ions;

a photocatalyst adapted to be brought into contact with said liquid in said first section; and

a light source for irradiating said photocatalyst with a light ray having an energy that is not lower than that of a band gap of said photocatalyst such that said photocatalytic reaction is generated in said first section when said photocatalyst is in contact with said liquid; and

a first device for adding an acid solution to said liquid before said liquid is brought into contact with said photocatalyst such that, prior to said irradiating, a pH of said liquid is made to be lower than an isoelectric point of said photocatalyst.

4. (Currently Amended) An apparatus according to claim 3, wherein ~~said apparatus further comprises a~~ the first device for adding an acid solution to said liquid before said liquid is brought into contact with said photocatalyst comprises an acid solution pump located in a pH adjustment section of the apparatus, wherein the pH adjustment section is positioned upstream of the first section.

5. (Currently Amended) An apparatus according to claim [4] 3, wherein said apparatus further comprises a pH meter for measuring pH of said liquid, and wherein said first device comprises a means for changing an amount of

said acid solution added to said liquid, in accordance with said pH measured by said pH meter, thereby adjusting said pH of said liquid.

6. (Original) An apparatus according to claim 5, wherein said means is configured such that said pH of said liquid is adjusted to not higher than 4.

7. (Original) An apparatus according to claim 3, wherein said apparatus further comprises a second device for removing a dissolved oxygen from said liquid by aerating said liquid with a gas that is free from oxygen.

8. (Original) An apparatus according to claim 7, wherein said apparatus further comprises a second section positioned upstream of said first section such that said dissolved oxygen is removed from said liquid by said second device in said second section and then said photocatalytic reaction is generated in said first section.

9. (Original) An apparatus according to claim 7, wherein said apparatus is configured such that said dissolved oxygen is removed from said liquid in said first section.

10. (Original) An apparatus according to claim 3, wherein said apparatus further comprises a third device for adding an agent to said liquid before said liquid is brought into contact with said photocatalyst, said agent eliminating holes that are produced together with electrons by said photocatalytic reaction.

11. (Currently Amended) An apparatus for purifying a liquid containing bromide ions and/or bromate ions, said apparatus comprising:

a first section for treating said liquid with ozone to remove an organic matter of said liquid and to sterilize said liquid;

a second section for removing said ozone from said liquid, said second section being downstream of said first section such that said liquid is allowed to flow from said first section to said second section;

a third section for generating therein a photocatalytic reaction, said third section being positioned downstream of said second section such that said liquid is allowed to flow from said second section to said third section;

a photocatalyst adapted to be brought into contact with said liquid in said third section; ~~and~~

a light source for irradiating said photocatalyst with a light ray having an energy that is not lower than that of a band gap of said photocatalyst such that said photocatalytic reaction is generated in said third section when said photocatalyst is in contact with said liquid; and

a first device for adding an acid solution to said liquid before said liquid is brought into contact with said photocatalyst such that, prior to said irradiating, a pH of said liquid is made to be lower than an isoelectric point of said photocatalyst.

12. (Original) An apparatus according to claim 11, wherein said second section comprises a means for aerating said liquid to remove said ozone from said liquid.

13. (Currently Amended) An apparatus according to claim 11, wherein said apparatus further comprises ~~(1) a first means for adjusting pH of said liquid before said liquid enters said third section and (2) a second means for adjusting pH of said liquid after said liquid has left said third section.~~

14. (Currently Amended) An apparatus for purifying a liquid containing bromide ions and/or bromate ions, said apparatus comprising:

a first section for subjecting said liquid to an accelerated oxidation by an oxidizer to remove an organic matter of said liquid and to sterilize said liquid;

a second section for generating therein a photocatalytic reaction, said second section being positioned downstream of said first section such that said liquid is allowed to flow from said first section to said second section;

a photocatalyst adapted to be brought into contact with said liquid in said second section; ~~and~~

a light source for irradiating said photocatalyst with a light ray having an energy that is not lower than that of a band gap of said photocatalyst such that said photocatalytic reaction is generated in said second section when said photocatalyst is in contact with said liquid; and

a first device for adding an acid solution to said liquid before said liquid is brought into contact with said photocatalyst such that, prior to said irradiating, a pH of said liquid is made to be lower than an isoelectric point of said photocatalyst.

15. (Currently Amended) An apparatus according to claim 14, wherein said apparatus further comprises ~~(1) a first means for adjusting pH of said liquid before said liquid enters said second section and (2) a second means for adjusting pH of said liquid after said liquid has left said second section.~~

16. (Original) An apparatus according to claim 14, wherein said first section comprises a combination of a means for generating an ozone gas and a means for generating an ultraviolet ray for said accelerated oxidation such that hydroxyl radicals as said oxidizer are formed by irradiating said ozone gas with said ultraviolet ray.

17. (Currently Amended) An apparatus for purifying a liquid containing bromide ions and/or bromate ions, said apparatus comprising:

a first section for treating said liquid with ozone to remove a first organic matter of said liquid and to sterilize said liquid;

a second section for subjecting said liquid to an accelerated oxidation by an oxidizer to remove a second organic matter of said liquid and to further sterilize said liquid, said second section being positioned downstream

of said first section such that said liquid is allowed to flow from said first section to said second section;

a third section for generating therein a photocatalytic reaction, said third section being positioned downstream of said second section such that said liquid is allowed to flow from said second section to said third section;

a photocatalyst adapted to be brought into contact with said liquid in said third section; ~~and~~

a light source for irradiating said photocatalyst with a light ray having an energy that is not lower than that of a band gap of said photocatalyst such that said photocatalytic reaction is generated in said third section when said photocatalyst is in contact with said liquid; and

a first device for adding an acid solution to said liquid before said liquid is brought into contact with said photocatalyst such that, prior to said irradiating, a pH of said liquid is made to be lower than an isoelectric point of said photocatalyst.

18. (Currently Amended) An apparatus according to claim 17, wherein said apparatus further comprises ~~(1) a first means for adjusting pH of said liquid before said liquid enters said third section and~~ (2) a second means for adjusting pH of said liquid after said liquid has left said third section.

19. (Original) An apparatus for purifying a liquid containing bromide ions and/or bromate ions, said apparatus comprising:

a first section for removing carbonic acid from said liquid, said first section comprising (1) a first means for adjusting pH of said liquid to allow said removing and (2) a second means for introducing a gas into said liquid to allow said removing;

a second section for subjecting said liquid to an accelerated oxidation by an oxidizer to remove an organic matter of said liquid and to sterilize said liquid, said second section being positioned downstream of said first section such that said liquid is allowed to flow from said first section to said second section;

a third section for generating therein a photocatalytic reaction, said third section being positioned downstream of said second section such that said liquid is allowed to flow from said second section to said third section;

a photocatalyst adapted to be brought into contact with said liquid in said third section; and

a light source for irradiating said photocatalyst with a light ray having an energy that is not lower than that of a band gap of said photocatalyst such that said photocatalytic reaction is generated in said third section when said photocatalyst is in contact with said liquid.

20 - 26. (Canceled)

27. (New) An apparatus according to claim 19, wherein:

said first means comprises an acid solution pump located in a pH adjustment section of the apparatus; and

the pH adjustment section is positioned upstream of the third section.

28. (New) An apparatus according to claim 11, wherein:

said first device comprises an acid solution pump located in a pH adjustment section of the apparatus; and

the pH adjustment section is positioned upstream of the third section.

29. (New) An apparatus according to claim 14, wherein:

said first device comprises an acid solution pump located in a pH adjustment section of the apparatus; and

the pH adjustment section is positioned upstream of the second section.

30. (New) An apparatus according to claim 17, wherein:

said first device comprises an acid solution pump located in a pH adjustment section of the apparatus; and

the pH adjustment section is positioned upstream of the third section.

31. (New) An apparatus for decomposing bromate ions contained in a liquid, said apparatus comprising:

a first section for generating therein a photocatalytic reaction to decompose said bromate ions;

a photocatalyst adapted to be brought into contact with said liquid in said first section;

a light source for irradiating said photocatalyst with a light ray having an energy that is not lower than that of a band gap of said photocatalyst such that said photocatalytic reaction is generated in said first section when said photocatalyst is in contact with said liquid; and

a first means for adding an acid solution to said liquid before said liquid is brought into contact with said photocatalyst such that, prior to said irradiating, a pH of said liquid is made to be lower than an isoelectric point of said photocatalyst.